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## AMENDMENTS TO THE CLAIMS

The listing below of the claims is intended to replace all prior versions and listings of claims in the present application:

**Listing of Claims:**

Claim 1 (canceled)

Claim 2 (allowed): A method for optimizing plate geometry of a plate of a plate link chain for use in a variable speed drive unit of a belt-driven conical-pulley transmission, said method comprising the steps of:

defining for a chain a predetermined applied longitudinal force to be transmitted by the chain and a predetermined applied longitudinal force lever arm;

providing an initial plate geometry for a plate that includes an opening for receiving pairs of rocker members that bear against sides of the opening, wherein the opening is bounded by spaced longitudinal legs that extend in a chain movement direction and spaced vertical legs that extend in a direction perpendicular to the chain movement direction, wherein the initial plate geometry includes an initial longitudinal leg length and longitudinal leg width, an initial vertical leg length and vertical leg width, and an initial plate thickness;

determining a bending moment (MB) acting on the longitudinal legs of the plate when the plate is subjected to a predetermined applied longitudinal force that is applied at a predetermined lever arm distance relative to the longitudinal leg from the following bending moment relationship based upon the following plate geometry variables:



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$$MB = \frac{F * He}{k+1} \bullet \left[1 - \frac{He}{L2}\right] \quad \text{with} \quad k = \frac{I2 * L1}{I1 * L2}, \text{wherein}$$

$F$ = applied longitudinal force

$He$ = lever arm of the applied force $F$

$I1$ = planar moment of inertia of the longitudinal leg (= leg height$^3$*leg thickness/12)

$I2$ = planar moment of inertia of the vertical leg (= leg width$^3$*leg thickness/12)

$L1$ = overall length of the longitudinal leg

$L2$ = overall length of the vertical leg;

modifying respective ones of the plate geometry variables; and

calculating longitudinal leg bending moments for different plate longitudinal leg lengths and different longitudinal leg planar moments of inertia at the predetermined applied longitudinal force and the predetermined applied longitudinal force lever arm until a minimum longitudinal leg bending moment is achieved to thereby provide a plate of minimum longitudinal leg material usage and minimum longitudinal leg weight for the predetermined longitudinal force that is applied to the plate opening at the predetermined lever arm distance relative to the longitudinal leg.

Claim 3 (allowed): A method for optimizing plate geometry of a plate of a plate link chain for use in a variable speed drive unit of a belt-driven conical-pulley transmission, said method comprising the steps of:

defining for a chain a predetermined applied longitudinal force to be transmitted by the chain and a predetermined applied longitudinal force lever arm;

providing an initial plate geometry for a plate that includes an opening for receiving pairs of rocker members that bear against sides of the opening, wherein the opening is bounded by spaced longitudinal legs that extend in a chain movement direction and spaced vertical legs that extend in a direction perpendicular to the chain movement direction, wherein the initial plate geometry includes an initial longitudinal leg length and longitudinal leg width, an initial vertical leg length and vertical leg width, and an initial plate thickness;

determining a bending moment (MA) acting on the vertical legs of the plate when the plate is subjected to a predetermined applied longitudinal force that is applied at a predetermined lever arm distance relative to the longitudinal legs from the following bending moment relationship based upon the following plate geometry variables:

$$MA = F * He * \left[1 - \frac{1}{k+1} \bullet \left(1 - \frac{He}{L2}\right) - \right] \qquad \text{with} \quad k = \frac{I2 * L1}{I1 * L2}, \text{wherein}$$

$F$ = applied longitudinal force

$He$ = lever arm of the applied force $F$

$I1$ = planar moment of inertia of the longitudinal leg (= leg height$^3$*leg thickness/12)

$I2$ = planar moment of inertia of the vertical leg (= leg width$^3$*leg thickness/12)

$L1$ = overall length of the longitudinal leg

$L2$ = overall length of the vertical leg;

modifying respective ones of the plate geometry variables; and

calculating vertical leg bending moments for different plate vertical leg lengths and different vertical leg planar moments of inertia at the predetermined applied force and the predetermined applied force lever arm until a minimum vertical leg bending moment is achieved to thereby provide a plate of minimum vertical leg material usage and minimum vertical leg weight for the predetermined longitudinal force that is applied to the plate opening at the predetermined lever arm distance relative to the longitudinal leg.

Claim 4 (canceled)

Claim 5 (currently amended): A plate for a plate-link chain for use in a variable speed drive unit of a belt-driven conical-pulley transmission, said plate comprising:

spaced longitudinal legs that extend in a chain movement direction and spaced vertical legs that extend in a direction perpendicular to the chain movement direction;

an opening for receiving pairs of rocker members that bear against sides of the opening, wherein the opening is bounded by the spaced longitudinal legs and by the spaced vertical legs;

wherein <u>the longitudinal legs each have an overall length and a thickness selected so that</u> a minimum bending moment (MB) ~~acting~~ <u>acts</u> on the longitudinal legs of the plate when the plate is subjected to a predetermined applied longitudinal force that is applied at a predetermined lever arm distance relative to the longitudinal legs, <u>wherein the minimum bneding moment</u> is determined from the following bending moment relationship based upon the following plate geometry variables by selectively

varying plate geometry variables until a minimum longitudinal leg bending moment is achieved to thereby provide a plate of minimum longitudinal leg material usage and minimum longitudinal leg weight for the predetermined longitudinal force that is applied to the plate opening at the predetermined lever arm distance relative to the longitudinal leg:

$$MB = \frac{F * He}{k+1} \bullet \left[1 - \frac{He}{L2}\right] \qquad \text{with} \qquad k = \frac{I2 * L1}{I1 * L2}, \text{wherein}$$

$F$ = applied longitudinal force

$He$ = lever arm of the applied force $F$

$I1$ = planar moment of inertia of the longitudinal leg (= leg height$^{3}$*leg thickness/12)

$I2$ = planar moment of inertia of the vertical leg (= leg width$^{3}$*leg thickness/12)

$L1$ = overall length of the longitudinal leg

$L2$ = overall length of the vertical leg.

Claim 6 (currently amended): A plate for a plate-link chain for use in a variable speed drive unit of a belt-driven conical-pulley transmission, said plate comprising:

spaced longitudinal legs that extend in a chain movement direction and spaced vertical legs that extend in a direction perpendicular to the chain movement direction;

an opening for receiving pairs of rocker members that bear against sides of the opening, wherein the opening is bounded by the spaced longitudinal legs and by the spaced vertical legs;

wherein the vertical legs each have an overall length and a thickness selected so that a minimum bending moment (MA) ~~acting~~ acts on the vertical legs of the plate when the plate is subjected to a predetermined applied longitudinal force that is applied at a predetermined lever arm distance relative to the longitudinal legs, wherein the minimum bending moment is determined from the following bending moment relationship based upon the following plate geometry variables by selectively varying plate geometry variables until a minimum vertical leg bending moment is achieved to thereby provide a plate of minimum vertical leg material usage and minimum vertical leg weight for the predetermined longitudinal force that is applied to the plate opening at the predetermined lever arm distance relative to the longitudinal leg:

$$MA = F * He * \left[1 - \frac{1}{k+1} \bullet \left(1 - \frac{He}{L2}\right) - \right] \qquad \text{with} \quad k = \frac{I2 * L1}{I1 * L2}, \text{wherein}$$

$F$ = applied longitudinal force

$He$ = lever arm of the applied force $F$

$I1$ = planar moment of inertia of the longitudinal leg (= leg height$^3$*leg thickness/12)

$I2$ = planar moment of inertia of the vertical leg (= leg width$^3$*leg thickness/12)

$L1$ = overall length of the longitudinal leg

$L2$ = overall length of the vertical leg.

Claim 7 (previously presented): A plate in accordance with claim 5, wherein $1 < k < 3.5$.

Claim 8 (previously presented): A plate in accordance with claim 6, wherein $1 < k < 3.5$.

Claim 9 (allowed): A method in accordance with claim 2, wherein $1 < k < 3.5$.

Claim 10 (allowed): A method in accordance with claim 3, wherein $1 < k < 3.5$.